



## PROFESSIONAL FIRE SAFETY ASSESSMENT

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K8 Supapanel

FIRE ASSESSMENT REPORT  
AS 1530.4:2014  
AS 4072.1-2005

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## 1 INTRODUCTION

The purpose of this report is to assess the use of the 72 mm thick Supapanel wall system for use as a fire isolated passageway in accordance with the National Construction Code Volume One Building Code of Australia 2022 Clause D3D12.

The Supapanel has been tested in accordance with AS 1530.4-2014 by Pfits / Fire TS Lab for the 62mm panel Warringtonfire for the 72mm panel. The Supapanel is proposed to be used as the walls and ceiling of the fire-isolated passageway.

The proposed passageway is to have an internal ceiling at least 2.4m in height, and up to 4 m, at an internal width of at least 1m up to 3 m wide. The maximum air gap between the vertical panels and the horizontal panels is to be 8 mm. In accordance with BCA Clause D3D12 the fire rating is only requires from the outside of the passageway. The following figures outline the proposed passageway installation including the corner connection of the Supapanel. The installation includes an internal steel frame with insulation and plasterboard lining.

FIGURE 1:  
FIRE ISOLATED PASSAGE DESIGN

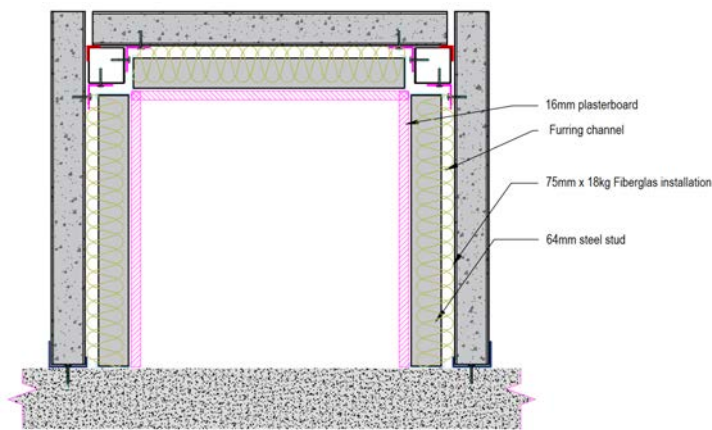
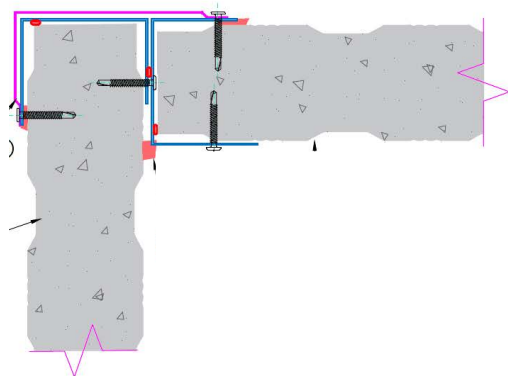


FIGURE 2:  
FIRE ISOLATED PASSAGE CORNER JOINT



In accordance with the National Construction Code Clause A5G3 (1)(d) evidence to support that the use of a material, product, form of construction or design meets a Deemed-to-Satisfy Provision may be in the form of a report issued by an Accredited Testing Laboratory. The report demonstrates that a material, product or form of construction fulfils specific requirements of the BCA, and sets out the tests the material, product or form of construction has been subjected to and the results of those tests and any other relevant information that has been relied upon to demonstrate it fulfils specific requirements of the BCA.



In accordance with the National Construction Code Specification 1 Clause S1C2 the tested building element meets the requirement of Specification 1 for fire resistance of building elements where it differs in only a minor degree from a prototype tested under the standard fire test. The FRL attributed to the building element is confirmed in a report from an Accredited Testing Laboratory.

AS 1530.4-2014 outlines the minimum information required for regulatory compliance within Clause 2.16.3. It is required that details of the testing body, details of the test and the applicability of the results for the specimens to be evaluated.

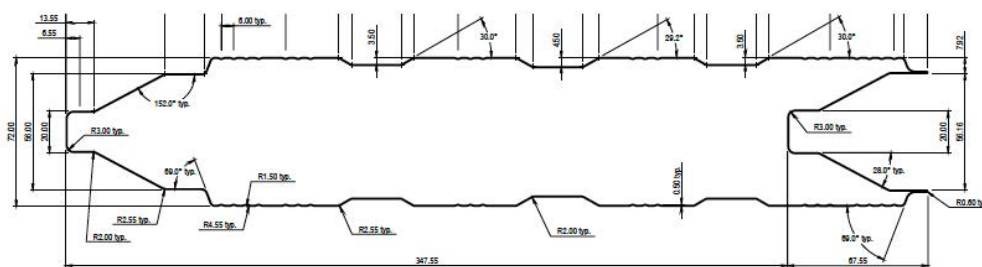
This report is issued by Benjamin Hughes-Brown, Accredited Laboratory Signatory and Chartered Professional Engineer of Ignis Labs for use under the Deemed-to-Satisfy requirements of the NCC Volume 1 BCA. This report is by an Accredited Testing Laboratory and serves as a certificate from a signatory of an Accredited Testing Laboratory and professional engineer in accordance with Clause A5G3(1)(d) and A5G3(1)(e) of the BCA. Assurance holds accreditation to AS 1530.4-2014 and AS 4072.1-2005.

## 2 SUBJECT TEST SPECIMEN

The K8 Supapanel is a 420mm deep x 72mm thick panel (nominal 350mm between panel to panel joints) comprised an aerated cement core encased in a 0.3 to 0.4mm thick mild galvanised steel 250 MPa skin with a 425 Kg concrete core. The 0.35 mm thick steel casing was subjected to testing. The following figures detail the 72mm wide panels characteristics.

Figure 3:

72MM SUPAPANEL



The Wall Technologies wall system has been tested by pfits, Fire TS Labs and Ignis Labs in accordance with AS 1530.4:2014. The K8 Supapanel, being a 72mm panel width achieves the following Fire Resistance Levels:

<b>Fire Resistance Level – 72mm thick</b>	
The A5 wall system includes the 72mm panel with fire grade mastic.	
<b>BCA Clause</b>	<a href="#">Test Report</a>
Clause A5.4	
AS 1530.4:2014	
<b>Supporting Evidence</b>	<a href="#">Test Report</a>
FireTSLabs	PF23046 13.09.2023
<b>Application</b>	
The K8 Supapanel is considered suitable for installation where a wall that achieves a Fire Resistance Level of at least -/120/120.	
<b>Installation Conditions</b>	
The K8 Supapanel is to be installed in accordance with K8 Installation Guide 2020.	
<b>Fire Resistance Level</b>	
Structural Adequacy	-
Integrity	120
Insulation	120



### 3 WIND LOAD TESTING

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The following is an extract of reporting from Robert Bird Group based on the testing conducted by Ian Bennie & Associates.

Robert Bird Group – Consulting Structural Engineers, were commissioned from Wall Technologies Pty Ltd to prepare an Interim Structural Design Certificate for the 72mm Supapanel System maximum height vs wind pressure vs deflection charts based on the available test data and installations tabulated below and derived via methods of theoretical interpolation of testing data.

Robert Bird Group undertook this theoretical desktop assessment and detailed design work for the proprietary installations as specifically tested and reported by Ian Bennie Associates to formulate theoretical interpolations of various spans:

- a. Superpanel Test Report: K8 Supapanel - 0.35BMT/380 kg/m<sup>3</sup>@3600 Span, Report No. 2021-085-S1-S4 (Amended) dated 3rd February 2022.
- b. Superpanel Test Report: K8 Supapanel - 0.35BMT/380 kg/m<sup>3</sup>@6000 Span under maximum 300 and 600 Pa testing loads received on January 2022.

The Supapanel wall system used in the 3.6m and 6m high Supapanel testing typically comprised of 2 # 350mm wide core samples combined and interconnected with a half width core each side to form the 3.6m and 6.5m high x 1.0m wide tested system except one testing wall system comprised of 4 # 350mm wide core samples combined with a half width core each side to form the 6.5m high x 1.75m wide tested system. Each core contained 380 kg/m<sup>3</sup> density concrete with the screw fixings only installed between panels on the positive pressure face.

The testing report from Ian Bennie & Associates provides an outline for this engineering review undertaken of the wind testing data and how this data was utilised to validate the certification of the Supapanel products with 0.35 BMT. The testing application is limited to 3.6 m and 6.5 m maximum height as per the tested panels for the specified 'Safe Working and Ultimate Wind Loads' in the testing reports. These wind loads have been determined for Region A zones to AS 1170.2-2011 and are not applicable to cyclonic regions.

The testing by Ian Bennie & Associates as well as the evaluation by Robert Bird Group has concluded that the K8 Supapanel has the capacity to maintain its integrity and fixing over a span of 6m when subject to Safe Working and Ultimate Wind Loads. This demonstrates that the fixing and jointing systems proposed are suitable for application in a variety of configurations.

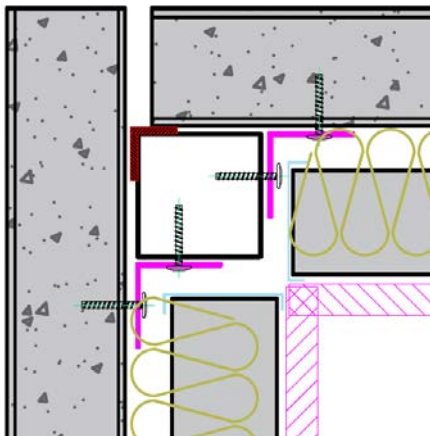
Further to the wind testing of the Supapanel, several jointing options have been considered where the span can be increased to 4m x 6.5m. The joints provide the equivalent connection and jointing to the panels and are deemed to present an equivalent level of strength to the wall system, should it be tested. It is important to note that under AS 1530.4 testing arrangements, only a flat wall can be tested. Joints and angles do not have capacity to be tested. The testing undertaken by Ian Bennie & Associates demonstrates the strength of the connections under wind conditions.



## 4 VARIATIONS TO THE TESTED PROTOTYPE

The proposed construction shall be horizontal oriented 72 mm thick Supapanel ceiling tested in FireTSLabs PF23046 13.09.2023 with consideration of the following variations:

- Modify the support detail and fix an internal layer of 16 mm thick fire grade plasterboard directly to the underside of the Supapanel. The fixing spacing shall be as per the maximum spacing of a plasterboard ceiling system. The ceiling of the fire-isolated passageway shall be non-trafficable and support its own weight only.
- Modify the support detail and fix a square hollow steel to the corner with steel angle as outlined in the following figure.



- Include an internal steel frame, glasswool insulation and plasterboard lining to the internal walls and ceiling.

The following figures outline the various installations of the fire rated passageway

FIGURE 4:  
FIRE ISOLATED PASSAGE DESIGN OPTION

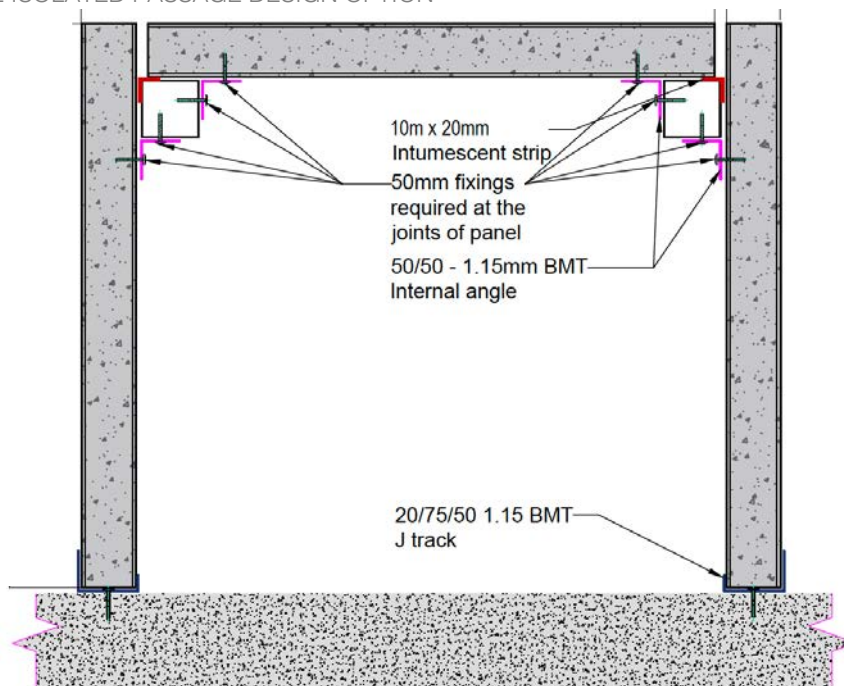




FIGURE 5:  
FIRE ISOLATED PASSAGE DESIGN OPTION

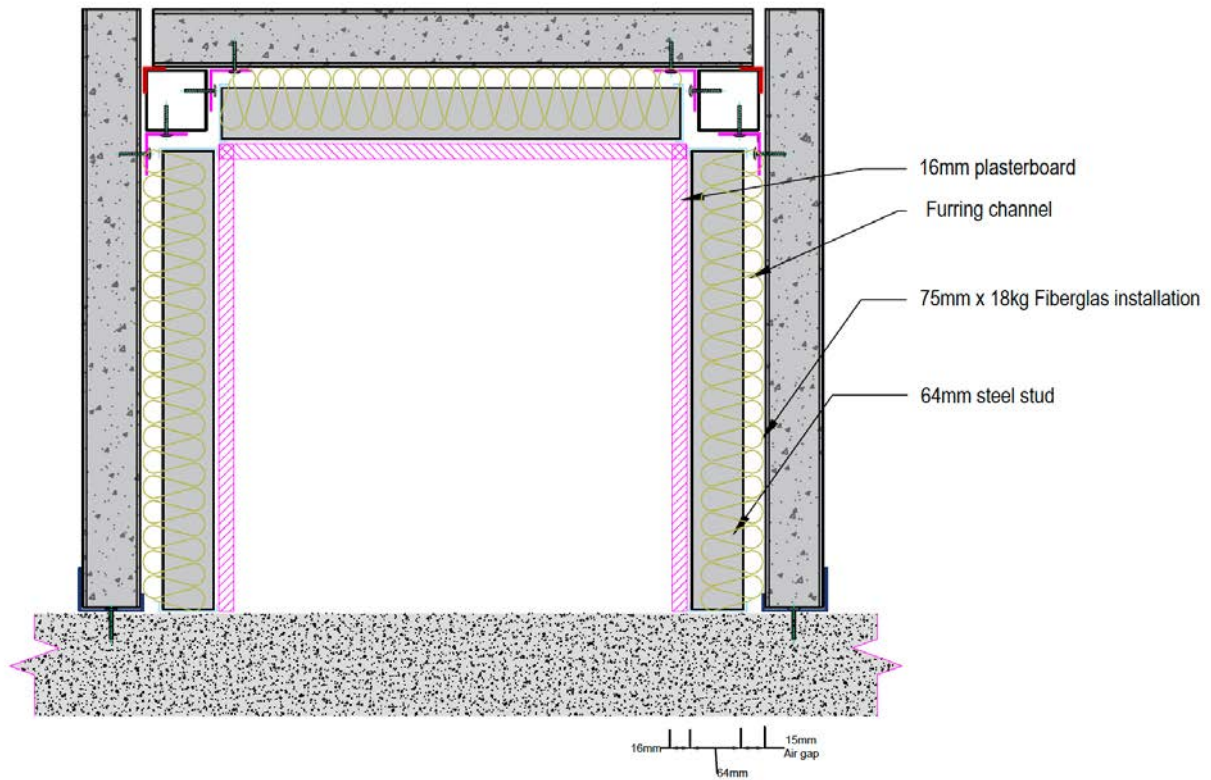


FIGURE 6:  
FIRE ISOLATED PASSAGE DESIGN OPTION

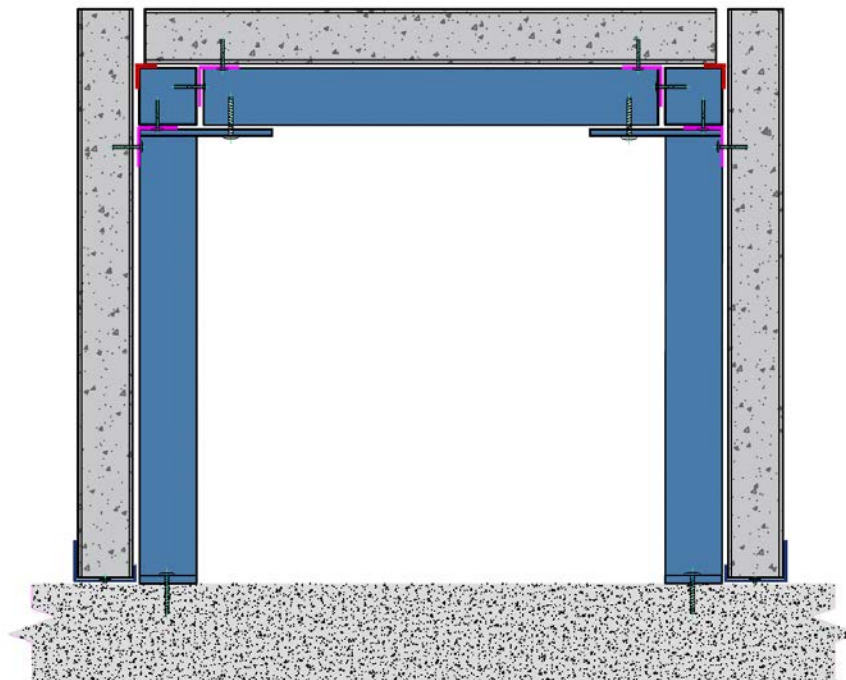
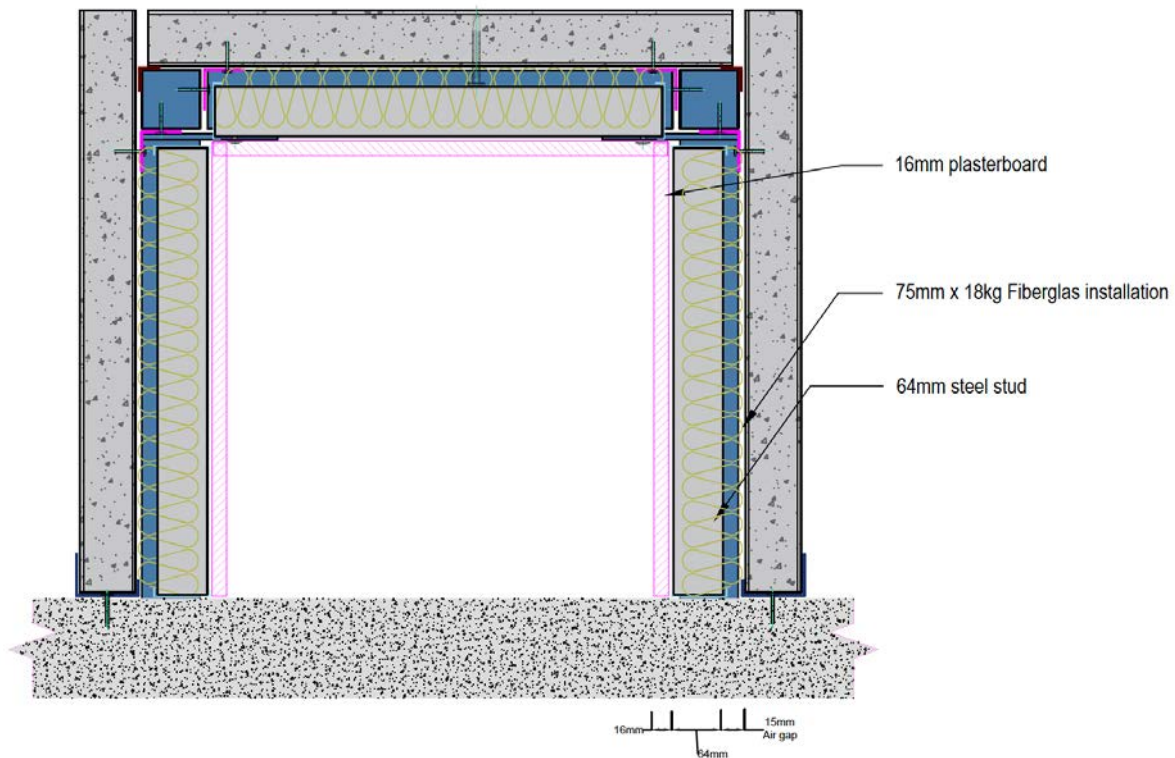






FIGURE 7:  
FIRE ISOLATED PASSAGE DESIGN OPTION



## 5 FORMAL ASSESSMENT SUMMARY

Based on the discussion presented in this report, it is the opinion of this testing authority that if the specimen described in this report had been modified within the scope of testing it will achieve a fire resistance performance (FRL) of at least 120/120/120.

## 6 DIRECT FIELD OF APPLICATION

This assessment applies to the horizontal orientated Supapanel ceiling system and Supapanel wall system exposed to a fire from the outside.

## 7 REQUIREMENTS

The report details the methods of construction, test conditions and assessed results that would have been expected had the specific elements of construction described herein been tested in accordance with AS 1530.4.

It is required the support walls be made from construction capable of providing adequate support for the Supapanel ceiling system for the required FRL period.

It is required that any steel posts used within the fire isolated passageway are to be capable of providing adequate lateral support for the horizontal Supapanel wall system for the required FRL period.

Any further variations with respect to the size, construction details, loads, stresses, edge or end conditions, other than those identified in this report, may invalidate the conclusions drawn in this report.

The structural design for supporting the panels may vary from the details provided. Any changes to the structural supporting systems are required to be designed and approved by a structural engineer to meet the above requirements.



## 8 VALIDITY

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This assessment report does not provide an endorsement by Ignis Labs Pty Ltd of the actual products supplied.

The conclusions of this assessment may be used to directly assess the fire resistance performance under such conditions, but it should be recognised that a single test method will not provide a full assessment of the fire hazard under all fire conditions.

Because of the nature of the fire resistance testing, and the consequent difficulty in quantifying the uncertainty of measurement, it is not possible to provide a stated degree of accuracy. The inherent variable in test procedures, materials and methods of construction, an installation may lead to variations in performance between elements of similar construction.

The assessment can therefore only relate to the actual prototype test specimens, testing conditions and methodology described in the supporting data, and does not imply any performance abilities of constructions of subsequent manufacture.

This assessment is based on information and experience available at the time of drafting. The published procedures for the conduct of tests and the assessment of test results are the subject of constant review and improvement and it is recommended that this report be reviewed prior to application.

The information contained in this report shall not be used for the assessment of variations other than those stated in the conclusions above. The assessment is valid provided no modifications are made to the systems detailed in this report. All details of construction should be consistent with the requirements stated in the relevant test reports and all referenced documents.

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This assessment report does not provide an endorsement by Ignis Labs Pty Ltd of the actual product evaluated.

The conclusions of this assessment may be used to directly assess fire hazard, but it should be recognised that a single test method will not provide a full assessment of fire hazards under all conditions.

Because of the nature of fire testing, and the consequent difficulty in quantifying the uncertainty of measurement, it is not possible to provide a stated degree of accuracy. The inherent variability in test procedures, materials and methods of construction, and installation may lead to variations in performance between elements of similar construction.

The assessment can therefore relate only to the actual prototype test specimens, testing conditions and methodology described in the referenced documents, and does not imply any performance abilities of constructions of subsequent manufacture.

This assessment is based on information and experience available at the time of preparation. The published procedures for the conduct of tests and the assessment of test results are the subject of constant review and improvement and it is recommended that this report is reviewed on or before, the stated expiry date.

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